

ISUZU

Technical Service

BULLETIN

IMPORTANT SERVICE INFORMATION FOR:
 ✓ SERVICE MANAGER
 ✓ SERVICE ADVISOR
 ✓ TECHNICIAN
 ✓ PARTS DEPARTMENT
 ✓ WARRANTY PERSONNEL

BULLETIN NUMBER:
SB03-05-S001

ISSUE DATE:
MAY 2003

GROUP:
TRANSMISSION

DTC P1870 AND THE 4L30E AUTOMATIC TRANSMISSION (THIS BULLETIN SUPERSEDES BULLETIN SB02-05-S003)


SUV

AFFECTED VEHICLES

1996-1998 Trooper (UX), 1996-1997 Rodeo (UC), 1998-1999 Rodeo (UE), 1998-1999 Amigo (UA) and 1999 VehiCROSS (VX)

SERVICE PROCEDURE

Diagnosis:

If any other DTC's are set, resolve the other codes before performing this bulletin on DTC P1870.

If DTC P1870 is the only code do the following:

- Remove both the main and adapter case transmission oil pans and check for metal and fiber debris.
- If more than 1 tablespoon of metallic and fiber debris is found follow normal transmission replacement procedure for warrantable cases.

Corrective Action:

Replace the Separator Plate Gaskets and use the increased torque specification for the main case bolts.

1. Reinstall the oil pans with the original gaskets.
2. Remove the transmission from the vehicle (4WD recommendation: remove the transfer case before removing the transmission). Refer to service manual.
3. Clean the outside of the transmission.

SERVICE INFORMATION

Condition:
NOTE: This bulletin has been revised to clarify important diagnostic steps and warranty claim information.

Transmission indicator light may be on and DTC P1870 is set in the PCM (Powertrain Control Module).

Possible Cause:

Improper torque of the main case bolts permitted the adapter plate gaskets to slip out of position. The out of position gasket created an internal hydraulic pressure leak that created low fluid pressure to the lockup clutch.

Correction:

Follow the procedures in this bulletin to replace the adapter plate gaskets.

4. Attach the holding fixture to the transmission, Special Tool P/N J-8769-02 (Trans Holding Fixture) & J-3289-20 (Base). Secure the transmission with the input shaft pointing up. **NOTE:** To avoid damaging transmission do not over tighten the holding fixture.

5. Place an oil catch pan under the transmission.

6. Slide the torque converter off the transmission. Avoid damaging the pilot by carefully setting the converter on the bench with the opening up.

7. Remove the oil pans.

8. Remove the adapter case harness.

9. Remove the turbine shaft o-ring and discard it (see figure 1).



Figure 1

10. Remove the seven case housing bolts at the outer ring, *not the 5 inner bolts* (see figure 2).



Figure 2

11. Lift the converter housing and oil pump assembly straight up. Set the assembly on the bench with the pump side up (see figure 3).

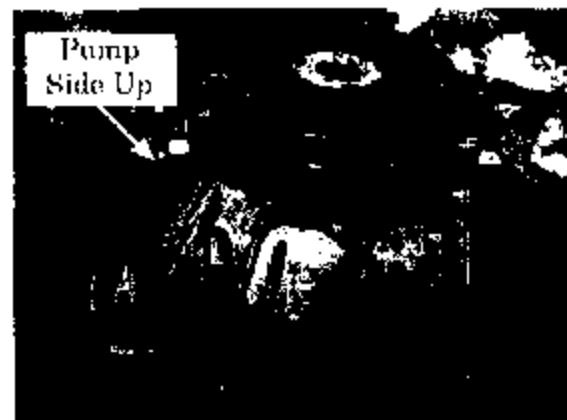


Figure 3

12. Replace the case o-ring and gasket (8-96017-189-0 o-ring & 8-96014-973-0 gasket) (see figure 4).



Figure 4

13. Wet the new gasket and o-ring with DEXRON®-III with a G-License Number (G-XXXX) (refer to bulletin IB03-05-S001 -L30E/L60E Transmission Fluid) (see figure 5).



Figure 5

14. Line-up the case holes with the gasket and install the o-ring without twisting it.

15. Use **ONLY** petroleum jelly to hold the selective thrust washer in place.

16. Replace the turbine shaft scarf-cut plastic seals (8-96017-481-0 scarf seals 2x) (see figure 6).

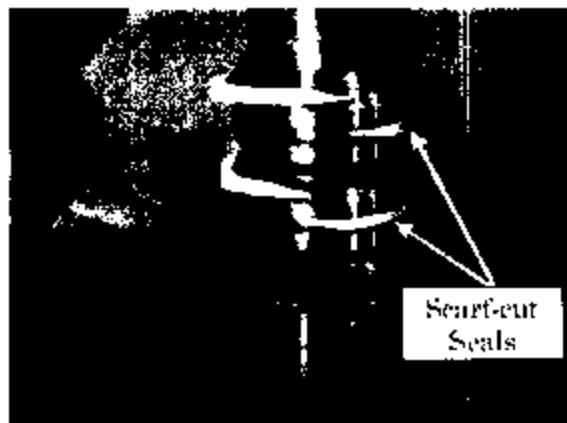


Figure 6

17. Apply petroleum jelly in the seal grooves to hold the new seals in place.
NOTE: Be sure the angled cut ends are properly matched or the new seals will not seal properly.

18. Grab the turbine shaft and lift out the 4th clutch, 4th retainer, & overrun assembly (see figure 7).

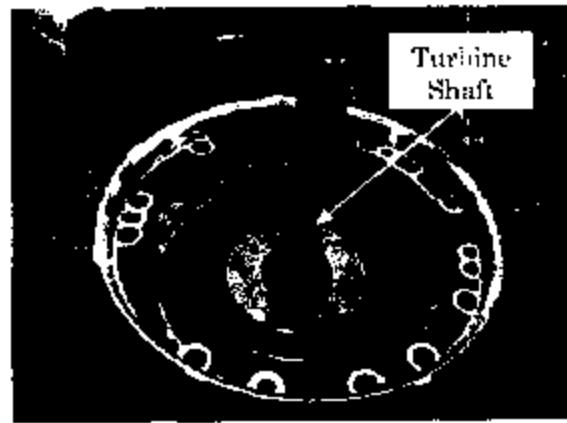


Figure 7

19. Remove the remaining steel 4th clutch plate (*see figure 8*).

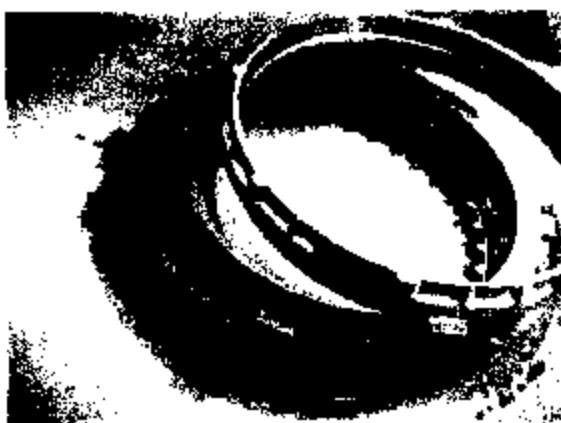


Figure 8

22. Lift the adapter case off the main case (*see figure 10*).



Figure 10

20. Remove the overdrive internal gear and thrust bearing (*see figure 9*).

21. Remove the thrust washer.

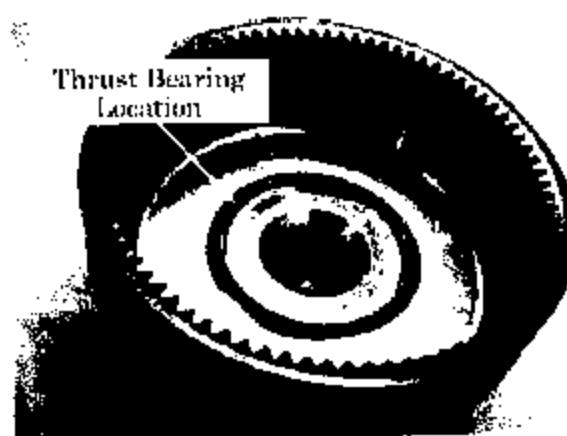


Figure 9

23. Remove the selective washer from the center support housing (*see figure 11*).



Figure 11

24. Remove two oil passage o-rings from the main case and discard them (*see figure 12*).

25. Install two oil passage o-rings on the main case (8-96014-270-0 O-Ring, Case Drain Back 2x). Lube them with DEXRON®-III with a G-License Number (G-XXXX) (*refer to bulletin IB03-05-S001 -L30E/-L60E Transmission Fluid*) (*see figure 12*).



Figure 12

26. Compress the reverse spring seat with Special Tool P/N J-23327 (Reverse Spring Seat Compressor) (*see figure 13*).



Figure 13

27. Remove and discard the retaining (snap) ring (*see figure 14*).

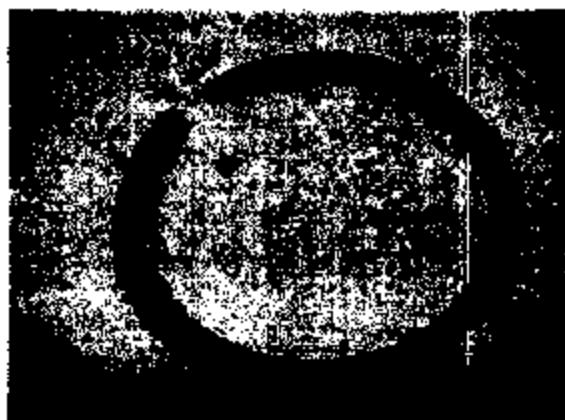


Figure 14

28. Remove the compressor tool and spring seat. Discard the spring seat.

29. Remove the reverse piston. Discard the inner & outer o-rings (*see figure 15*).

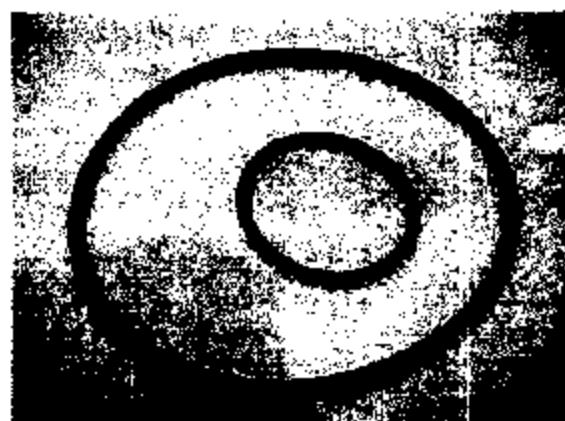


Figure 15

30. Remove the center support bolts.

31. Remove the center support housing from the adapter case (see figure 16).

32. Use a plastic hammer if necessary.



Figure 16

IMPORTANT: The separator plate gaskets will look deformed and are the primary internal leak. If both gaskets are flat, in-place and not torn STOP, replacing them will not repair the complaint.

NOTE: Follow normal transmission replacement procedure for warrantable cases.

33. Replace the separator plate gaskets (8-96016-511-0 gasket 2x) (see figure 17 & 18).



Figure 17



Figure 18

34. Be sure the oil restrictor is in the correct location (see figure 19).

35. Stack the gasket, separator plate, gasket, center support on the adapter case (see figure 10).

36. Use the two 9 inch guide pins and the center support bolts to lineup the gaskets & plate. Special Tool P/N J-38588.

37. Reinstall the center support bolts. Torque to 25 N·m (18 lb·ft).

38. Install the inner & outer reverse piston o-rings (8-96014-331-0 inner seal & 8-96014-332-0 outer seal). Lube them with DEXRON®-III with a G-License Number (G-XXXX) (refer to bulletin H303-05-S001 4L30E / H30E Transmission Fluid) or petroleum jelly (see figure 20).

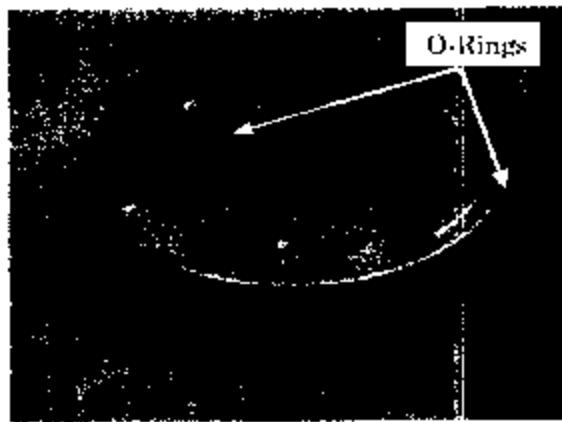


Figure 20

39. Reinstall the reverse piston. Tool is not required to guide the o-rings (see figure 20).

40. Place the springs (24) on the piston. Replace damaged springs as needed (8-08958-719-0 spring) (see figure 21).

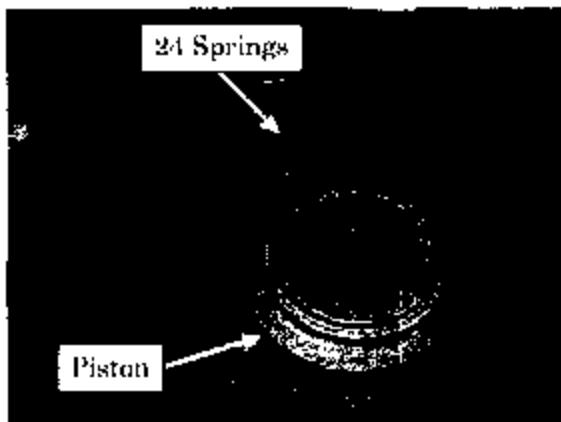


Figure 21

41. Install the new spring seat (8-05258-021-0) and compress the springs with the compressor. Special Tool P/N J-23327 (Reverse Spring Seat Compressor) (see figure 13).

42. Install the new retaining (snap) ring (8-05258-093-0) and remove the compressor.

43. Reinstall the selective washer with grease to hold it.

44. Install a new case o-ring (8-96017-189-0). Lube it with DEXRON®-III with a G-License Number (G-XXXX) (refer to bulletin IB03-05-S001 4L30E/4L60E Transmission Fluid).

45. Install the two 9 inch guide pins. Special Tool P/N J-38588 (see figure 22).

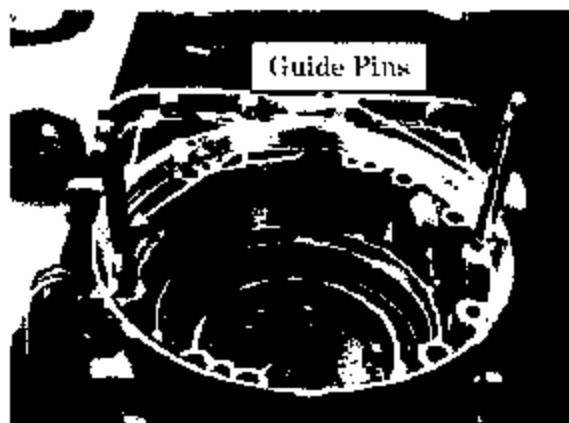


Figure 22

46. Install the adapter case.

47. Reinstall the thrust washer, tangs toward the adapter case in their slots (see figure 23).

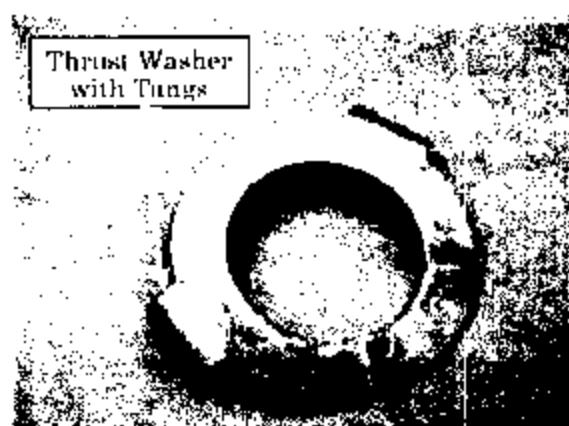


Figure 23

48. Lube the washer with DEXRON®-III with a G-License Number (G-XXXX) (refer to bulletin IB03-05-S001 4L30E/4L60E Transmission Fluid).

49. Reinstall the overdrive internal gear and thrust bearing. DEXRON®-III with a G-License Number (G-XXXX) (refer to bulletin IB03-05-S001 4L30E/4L60E Transmission Fluid) (see figure 9).

NOTE: Thrust bearing outer case faces the internal gear.

50. Remove the 1th clutch & 4th retainer from the overrun assembly (*see figure 24*).

51. Reinstall the turbine shaft and overrun assembly (*see figure 24*).

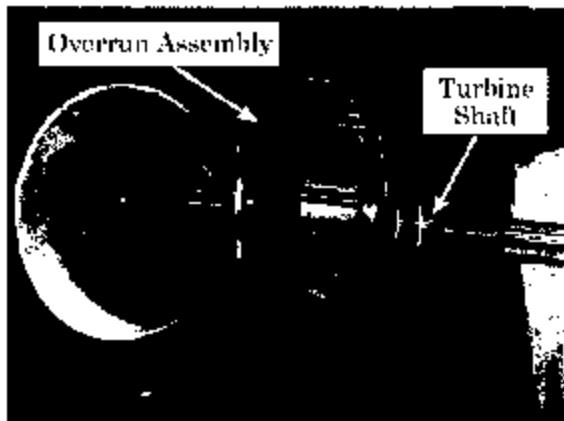


Figure 24

52. Reinstall the 1th clutch; steel, lined, steel, steel, lined, steel (*see figure 8*).

53. The steel plates go in with the short tang towards the valve body.

54. Reinstall the 1th retainer, cutout notch facing up & toward the valve body (*see figure 8*).

55. Place the new gasket on the adapter case (*see figure 4*).

56. Lower the converter housing and oil pump assembly onto the adapter case (*see figure 3*).

57. Press the converter housing and oil pump assembly and case together by hand.

58. Install two of the seven housing bolts, hand tight (*see figure 25*).

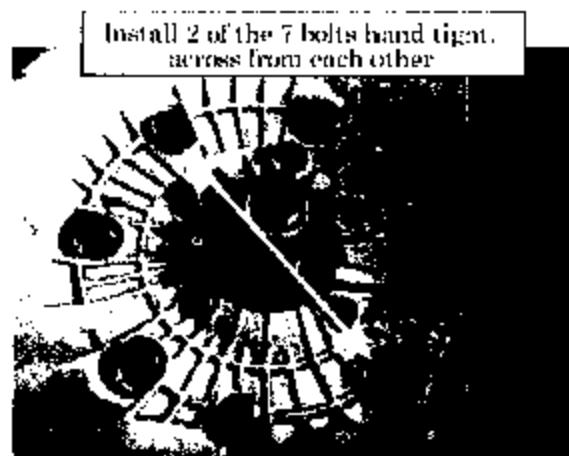


Figure 25

59. Remove the two 9 inch guide pins (*see figure 22*).

60. Install the remaining housing bolts (seven total) and torque them to 5.1 N·m (10 lb·ft) in a cross pattern.

61. NOTE: This is an increased torque specification (*see figure 25*).

62. Install a new turbine shaft o-ring (8-96013-953-0). Lube it with DEXRON®-III with a G-License Number (G-XXXX) (*refer to bulletin HB03-05-S001 4L30E/4L60E Transmission Fluid*).

63. Reinstall the adapter case harness. Torque the valve body bolt to 20 N·m (15 lb ft).

64. Install new oil pan gaskets without any sealer (8-96014-234-0 gasket, main & 8-96014-235-0 gasket, adapter).

65. Remove the transmission from the holding fixture and set it, pan down, on the bench.

66. Lubricate the oil pump seal and the converter sealing surface with DEXRON®-III with a G-License Number (G-XXXX) (refer to bulletin IB03-05-S001 4L30E/4L60E Transmission Fluid).

67. Slide the converter onto the transmission. Turn and push to align the turbine shaft, the stator shaft, and the oil pump. The converter must be completely inside the bellhousing.

68. Reinstall the transmission.

NOTE:

1. The bellhousing bolt located two holes above the starter motor must be no longer than 40 mm. If a longer bolt is used, it will break into the engine coolant jacket.

2. Gap between the converter and drive plate. A 10 mm gap or more must exist otherwise the oil pump will be damaged when the engine is started. If the gap is too small, remove the transmission, then turn and push the converter to engage the pump.

69. Set the transmission fluid level. See appropriate Service Manual.

70. Test-drive the vehicle.

SPECIAL TOOL REQUIREMENTS

Kent-Moore P/N J-8763-02 (Trans Holding Fixture) & J-3289-20 (Base)

Kent-Moore P/N J-23327 (Reverse Spring Seat Compressor)

Kent-Moore P/N J-38588 (Two 9 inch Guide Pins)

Kent-Moore P/N J-38558 (Turbine Shaft Seal Installer & Sizer)

PARTS INFORMATION

Part Number	Description	Quantity Required
8-96017-189-0	O-Ring, Case Sealing	2
8-96014-973-0	Gasket, Oil Pump	1
8-96017-484-0	Scarf Seal, Turbine Shaft	2
8-96014-270-0	O-Ring, Housing Drain	2
8-96016-514-0	Gasket Separator Plate	2
8-96014-831-0	Seal (Inner) Reverse Piston	1
8-96014-332-0	Seal (Outer) Reverse Piston	1
8-05258-021-0	Seat Spring, Reverse Piston	1
8-05258-093-0	Ring (Snap) Retainer, Reverse	1
8-96014-234-0	Gasket, Oil Pan	1
8-96014-235-0	Gasket, Adapter Pan	1
8-96013-953-0	O-Ring, Oil Seal: Turbine Shaft	1
2-90531-815-0	DEXRON®-III with a G-License Number (G-XXXX)	As Required

WARRANTY CLAIM INFORMATION

Use the following labor operations

Operation	Operation No.	Task	Time	Special Instructions	Failed P/N	Trouble Code	Sublet Code	Sublet Allowance
Adapter Plate Gasket Repair	051261	Replace Steps 1-70	11.2	Not to be used with Labor Op. 051260	8-96018-514-0	71		
Diagnostic	051260	Steps 1-32	2.0	*See Note Below				

Labor Time includes administrative time allowance.

***NOTE: This labor operation is to be used for bench time (steps 1-32) and must be accompanied by a "Automatic Transmission R&R/Replace" labor operation, on a separate claim.**

NATIONAL SERVICE DEPARTMENT

SB03-05-S001